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Original Article

PERI-URBAN AREAS: SUSTAINABILITY DIMENSION

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ABSTRACT

Peri-urban areas are defined as the areas that surround our metropolitan areas and cities - neither urban nor rural in the conventional sense. They are the fastest growing regions, globally. This paper comprises of various definitions, Peri-urban as a process andfactors of Peri-urbangrowth and changes occurred in the environment due to it. This paper also covers the sustainability of such areas that leads to issues of natural resource depletion, environmental deterioration, various human health consequences, land use change and Peri-urban water insecurity. It outlines the policies that are interrelated to the Peri-urban areas. Hence; it will be pertinent to study an approach that responds to the specific environment, social, economic and environmental aspects of the Peri-urban interface. Thereby, concluding the paper with a further focus on the sustainabilityof Peri-urban area and its assessment.

KEYWORDS: Peri-Urban Areas, Environment & Economic

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INTRODUCTION

Definitions of Peri-Urban Areas: The researcher has identified various dimensions for defining Peri-urban areas and parameters for identification of Peri-urban areas. Few of them can be defined as concept as a procedure.‘Peri-Urban’ has thus come to serve as a term to denote the intermediary zone between the ‘rural’ and the ‘urban’, that is, a geographical space where the rural meets the urban. The nearest equivalent to the term Peri-Urban in Dutch is “*halfstedig*”, meaning semi-urban; in German, it is an urbanlandlichenzone(urban-rural zones), and in Afrikaans, it is “*buitestedelik*” (outer city or beyond the city). In East Asia, the term often used is 'desakota' (city village) (Simon and McGregor et al., 2006; McGee, 1991), highlighting the Peri-Urban to mean a place where both rural and urban features co-exist. The urban fringes expand and shrink geographically, ‘eating’ their way into the countryside, while they are swallowed by the expanding urban core area. Hence, Shenk suggests ‘the concept of a twofold dynamism in a “rolling” fringe’. Simon (2008) asserts that the classic urban-rural dichotomy no longer exists, and the Peri-urban area is now a recognized entity for both studiesand for research. The urban areas in India are defined as follows, as per the Census of India 2011:

- All places with a municipality, corporation, and cantonment board or notified the town area committeeetc.
- All other places which satisfy the following criteria:
  - A minimum population of 5,000
  - At least 75 per centime of the male main working population employed in non-agricultural pursuits; and

- The density of population of at least 400 persons per sq.kilometer.
- All areas that are not categorized as urban areas are considered as Rural Areas.

Figure 1: Defining Peri-Urban Areas

Peri-Urban as a Process: Broadly, it could be understood as a concept that describes an interface between the three systems, namely, the agricultural system, the urban system, and the natural resource system (Allen, 2003). In this sense, it serves as an analytic construct to study rural-urban relationships (Narain, 2009a); many scholars characterize it therefore as a Peri-Urban interface (PUI) (Allen, 2003; Brook and Purushotthoman et al, 2003). The significance of the concept of Peri-Urban may, therefore, lie much more in the fact that it raises a fundamental question about the relevance of the rural-urban dichotomy – common in development studies and in government planning machinery – rather than as a tool to help demarcate certain geographical regions. A focus on conceptual distinctions is thus understood to be more appropriate for examining the continuum between the poles of urban and rural, and understanding the dynamics of change as they characterize urbanization processes.

Peri-Urban areas are characterized by not only geographical but also social and institutional transition. Socially, Peri-Urban areas are dynamic in nature, wherein social forms are constantly created, modified and discarded (Iaquinta and Drescher 2000). They are understood to be areas of social compression or intensification where the density of social forms, types and meanings increases, fomenting conflict and resolution. Because of land use change and the diversity of economic interests that this engenders, social groups tend to be heterogeneous and in constant transition (Allen 2003). Small farmers, informal settlers, industrial entrepreneurs and urban middle-class commuters may all co-exist in the same territory, though with different and competing interests, practices and perceptions.

Peri-Urban areas lie outside the legal jurisdiction of the cities and sometimes even outside the legal jurisdictions of municipal boundaries (Shaw, 2005). With the onset of urbanization, Peri-Urban areas grow in importance. This is because they provide the much-needed land and water for urban expansion while receiving much of the urban waste. Since they involve resource reallocations across uses, they are fertile grounds for studying questions of justice and equity, as well as raise fundamental questions about the politics of urban expansion and planning. As they represent a transition from rural to urban, a study of Peri-Urban areas gives insight into the nature of urbanization processes, as well as who the gainers and losers in this process are. Peri-Urban areas perform different functions for several people (Douglas, 2006) –

- For the poor, they serve as places where it is easier to build shelters and to occupy land for agriculture.
- For industry, they serve as sources of materials essential for urban life such as water, bricks or clay.
- For the middle class, a place for houses in a rural setting with recreational facilities.
- For local governments, sites for discarding urban wastes.
- For conservationists, the site of valuable protected areas.
- For education and human well-being, the place of first urban contact with major areas of natural vegetation and biodiversity.

Peri-urban areas encompass a wide range of economic activities, including farming, husbandry and cottage industries, together with industrial expansion, land speculation, residential suburbanization and waste disposal (Tacoli, 2006). Peri-urban agriculture is, in particular, an essential feature of the Peri-urban context and is an important facet of rural-urban relationships.

A mixture of land uses associated with a range of urban and rural livelihoods characterizes Peri-urban areas. Settlements are generally inhabited by communities of different economic status relating to land prices, which are affected by location in relation to the city, and which are considerably higher than in rural areas (Parkinson and Tayler, 2003). A distinguishing characteristic of Peri-Urban livelihoods is the role of both rural and urban resources in maintaining household security (Baker and Wallevik, 2003). Peri-Urban households draw their income both from agricultural activities as well as casual or regular employment in the neighbouring cities.

Elements of the Peri-Urban Ecosystem and Environmental Modifications

- **Rapid Population Growth** in the main city results in increased demand for land and higher housing costs, which in turn result in the outward movement of people from the main city to the city fringes, where they look for cheaper accommodation and residential land (Kumar, 2001).
- **Industrial Decentralization and the Imposition of More Rigid Policies for Cutting Down Contamination in Major Metropolises in Order to Comply with Global Demands.** The failure of the state executive and the legislature to effect changes in the urban environment, coupled with the increasing pressures of investment agencies, Multinational Companies (MNCs) and Trans National Corporations (TNCs) has resulted in Peripheral areas facing the brunt of the relocation of polluting industries. Neo-liberal policies giving greater space to private enterprise and large transnational corporations and policies for the **creation of special economic zones** have clearly played a key role in the creation of Peri-Urban spaces (Shaw, 2005; Narain, 2007; Reddy 2005; Keivaniet al, 2007).
- **Residential Development:** Residential development acts as a major driver of Peri-urbanization. The UNFPA’s Status of World Population Report (UNFPA 2007) highlights the fact that change in the value systems in the people residing in the urban areas to return to rural living and being close to nature was a part of the search for better quality of life, and this precipitated in the middle and upper-middle classes looking for residences in the Peri-urbanspaces. Further, the intensive use of the automobile for daily commuting was both a

cause and a consequence of urban sprawl (Arbury, 2006). This pattern of settlement spawned new locations for trade and services and this, in turn, further promoted automobile use and outward city growth.

- **Land Speculation and Industrial Expansion:** Speculators hold on to land in and around the city, expecting land values to increase. They do not bother renting, especially if they fear that users might gain some rights to continued use or controlled rents. People who need land for residential or productive purposes must, therefore, find land further from the centre (UNFPA, 2007).
- **Slum Rehabilitation:** Peri-urban areas often provide housing that is more accessible for poor residents and migrants in informal and scattered settlements. There is a general competition between the residents and the poor settlements, while the latter tend to be more insecure and subject to removal, the residents generally lack services and infrastructure. They compete with agriculture for space, and both can be displaced by other economic uses. Land conversion, market opportunities, and rapid flows of labor, goods, capital and wastes force land prices up (Allen et al., 1999). Peri-urbanization also increases the cost of living for the original rural population (Rostam, 1997).
- **Weak Government Regulation:** Since Peri-urban areas are generally beyond or between legal and administrative boundaries of central cities, the capacity of government authorities to regulate economic activity is particularly weak (Parkinson and Tayler, 2003). As a result, the process of urbanization can be, largely, unplanned, informal and illegal, with frequent struggles over land use.
- **Issues of Natural Resource Depletion, Environmental Deterioration and Human Health Consequences:** Improvements in the quality of life of urban systems are often made at the expense of extra-urban or Peri-urban areas, which are likely to bear a disproportionate share of environmental burdens (Satterthwaite, 2006). Environmental transformations in the Peri-urban to a substantial extent happen due to pressures exerted by external and nearby systems (Allen, 1999) the scale and nature of demographic growth and the absence of institutional management capacities Mathur (2012). These pressures often result in:
  - Environmental hazards threatening the quality of life, such as the depletion and degradation of environmental resources and loss of agricultural land
  - Ill-health and malnutrition for the poorest and other conditions derived from precarious living environments
  - Other environmental hazards resulting fromthe disposal of wastes beyond the local and regional absorptive capacities (Universities of Nottingham and Liverpool, 1999)
- **Agriculture and Agricultural Land in Peri-Urban**

  One of the most conspicuous manifestations of urban expansion and its implications for natural resource use is the irrevocable loss of agricultural land (Douglass, 1992 cited in Universities of Nottingham and Liverpool Report, 1999). The reasons for this loss are multiple and varied ranging across a wide spectrum. Some of the reasons include:

  - The abandonment of farming on the urban Periphery in the face of land purchases for speculative purposes

- The occupation, often illegal, of land for temporary housing Impacts on the remaining agricultural lands are likely to include Productivity decline due to the heavy pollution of soil and water by industries
- Degraded soil quality because of the use of fertilizers, pesticides and insecticides
- Land degradation in the areas surrounding agricultural lands

- **Land Use Change and Peri-Urban Water Insecurity**

  Water is a limited and important natural resource in most places, especially in the Peri-urban locations due to the competing interests and claims on this resource by various actors and agencies. With changing land use, pressures on the water can come from many quarters; farmers and Peri-Urban communities may lose access to water for irrigation as groundwater is channeled towards other competing uses like those for industrial units, farmhouses and recreational activities (Narain 2012). Further, people's access to water sources diminishes as the land on which they are located is acquired for urban and residential purposes. Besides, factories are often located at the village Peripheries and they may pollute local water sources. The inhabitants of Peri-urban settlements are often outside the ambit of organized sources of water supply as they lack tenurial status. This makes them dependent on other (and often contaminated) sources of water (Kundu, 2008). Rural-urban water conflicts have already begun to be noticed in Chennai (Janakarajan 2009) and Gurgaon (Narain, 2009b). Janakarajan et al (2006) focus on water conflicts in the Peri-urban areas of Chennai city.

- **Resource Depletion:** The key idea that they develop in their work is that, cities continue to expand at a rapid rate and eat into resources (such as land and water) available in Peri-urban areas. While land in Peri-urban villages is grabbed for urban housing, industrial establishments and for dumping urban wastes (both solid and liquid), very little is ploughed back by way of developing these areas. Despite the claims of public officials, recent studies show drinking water is not prioritized ahead of industrial uses (Allen, 2006). The industrial activities reduce water availability for the poor and deteriorate the quality of water and the long-term sustainability of this resource. The Peri-Urban water insecurity engendered by changing land use in Peri-Urban contexts affects the livelihood security of Peri-Urban communities.

- **Dumping of Industrial and Urban Wastes** into Peri-Urban water bodies was a common issue. Freshwater is thus lost, and this process is irreversible. Further, the building of embankments and roads is often done without any regard to the hydrology of the areas. Developments have taken place without regard to the carrying capacity of the aquifers as well. Sand mining for urbanization was identified as another emerging issue. The dumping of industrial wastes along the coastline was identified as a critical issue, as was anencroachment of village ponds and water bodies. This has disturbed eco-system resilience.

- **Peri-Urban as a Policy Space & Prescriptions for Reform:** The Peri-Urban interface has been described as a 'space crying out for attention' (Brook and Purushothoman et al., 2003: 134). Given the unique characteristics of the Peri-Urban interface, developing policy options for sustainable Peri-Urban settlements is a challenging task indeed. Policy prescriptions focus on improving the access of Peri-Urban dwellers to a wide range of assets, improving transportation and connectivity, involving both rural and urban governments at the local level, and most importantly, overcoming the rural-an urban dichotomy in planning for development. Given the huge diversity in Peri-Urban settings, a compelling case is made for a decentralized approach that is driven by local

demands and priorities in which, both urban and rural specialists need to work with each other. It is argued that this requires the straddling of the rural-urban divide that has been normally ignored by policy-makers and calls for interventions rooted in local contexts while avoiding generalizations (Tacoli, 2003; Brooke et al. 2003; Simon 2008; Allen 2003; Jacobi 2009). Other suggestions for policy intervention are:

- Policy intervention for Livelihoods and occupational diversification:
- policy interventions concentrate on improving access to assets
- Policy intervention for Transport and access to markets.
- Policy intervention of Agriculture and access to assets:
- Public participation and institutional contexts:

Sustainability

The Brundtland Commission's report defined sustainable development as -"development which meets the needs of current generations without compromising the ability of future generations to meet their own needs". An ability or capacity of something to be maintained or to sustain itself. It is about taking what we need to live now, without jeopardizing the potential for people in the future to meet their needs. If an activity is said to be sustainable; it should be able to continue forever. The ability to be sustained, supported, upheld, or confirmed is sustainability. With respect to the Peri-urban areas, the questions are about the overarching goals of policy. In principle, sustainable development combines economic, social and environmental ‘pillars’ or goals, to be achieved both locally and globally, and in both the short and longer term. In this case, the principles must begin with the complex, messy reality of Peri-urban areas.

Another approach is to explore the ‘sustainability tension’, between competing urban/rural, and development/conservation agendas (Ravetz 2000; CURE 2003).

- Urban development: a growth and modernization perspective
- Urban conservation: a containment and regeneration perspective
- Rural development: more local, rural-focused enterprise; Rural conservation: an environmental protection approach.

The Peri-urban can be pushed and pulled by these competing aspects. In a dynamic rural–urban-region, each of these will be evolving and can be shaped by spatial governance processes, whose result can be complex and inter-dependent. There are basic questions about the degree to which an urban system can be sustainable, given its heavy reliance on resources imported from beyond its boundaries – a city region is difficult to consider as a ‘unit of sustainability’, and this fact should be recognised.

Parameter of Sustainability

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Waste Management in India' in Ramprasad Sengupta and Anup K Sinha (eds), Challenge of Sustainable Development: The Indian Dynamics, Manak.

Social

- Demographics
- Housing
- Education
- Security
- Health
- Social & Community Services
- Governance
- Expenses and Public Administration

Economical

- Household income & expenses
- Employment
- Business

Environmental

- Energy (Excluding Transport)
- Transport
- Air Quality
- Noise
- Drinking Water
- Green Space Ecosystems
- Waste

CONCLUSIONS

Bottlenecks to developing and implementing policy options for the Peri-Urban interface, while scholars and researchers have given several prescriptions for treating with the management of Peri-Urban areas, in practice, these prescriptions are hard to enforce. Sustainability is considered as a dynamic concept based on transformation and rate of transformation of Peri-urban areas. The suggestion is that, if we can measure the pace of transformation in a specific field, we can see the alteration in the sustainability of that country and hence, we can propose spatial planning objectives. This will improve the planning process and effectiveness. The metropolitan areas and the tier-I city have been affecting the development since last many years. Thus, the Peri-urban areas near these cities do not displaythe prominent transformation

of social values, attitudes and rituals. Similarly, they do not show the rapid transformation of economic activity or morphological aspects. Several key points highlight the main challenges facing environmental and management of the Peri-urban interface.

- The Peri-urban interface is a specific type of support system, in which the value of the contour is much higher than the total of its constituent sections. The hypothesis is that, these forms are characterized by possibilities and conflicts as a termination of the physical proximity of different land use and related social, economic and environmental processes.
- Environmental degradation in the Peri-urban interface cannot be addressed in isolation from the processes taking place in the wider region. On one side of the coin, environmental problems affecting the quality of life of the poorest groups demand urgent attention. On the other side, these matters cannot be differentiated from the longer-term problems affecting the sustainability of the natural resource infrastructure. This in the end calls for a broadening of the focus of environmental planning and management, beyond localized environmental problems to a consideration of the sustainability of the urban bioregion.
- Environmental problems in the Peri-urban interface cannot be addressed only from the perspective of the sustainability of urban development or from sectoral interventions in some Peri-urban villages. More focus needs to be paid to the synergies and trade-offs of planning responses.
- For example, re-using urban waste as compost is often considered as a potential strategy for cutting the quantity of wastes that are otherwise simply disposed of or dumped and increasing the productivity of the land for agriculture activities in the Peri-urban interface, thus enhancing livelihood strategies.
- Geographical and administrative boundaries prevent a strategic approach to the Peri-urban interface that is holistic enough to include concerns at the city/region level and simultaneously take into consideration the specific problems affecting Peri-urban dwellers. Neither the immediate priorities of Peri-urban residential districts nor the long-term issues affecting the sustainability of the city/region are likely to be addressed by municipal authorities unless specific forces are set up for this function.
- Environmental problems and opportunities need to be analysed in the context of their political underpinnings, conditions and ramifications, which are derived from socioeconomic inequalities and political operations. The differing social and economic impacts of environmental change have implications not only in terms of victors and losers, but also the political implications altering the power relations between workers and the institutionalization of responses to the environmental problems.
- Local environmental conditions alone are insufficient to address the environmental challenges brought by a broader process of change affecting the Peri-urban interface, which, in turn, affect not only the long-term sustainability of urban and rural areas but also the quality of life and livelihoods of those living and working in the Peri-urban interface.
- The environmental perspective contributes to the formulation of a new approach in the analysis of how Peri-urban systems should be constituted, how they transform and how to act upon them. Nevertheless, work still demands to

be answered in the consolidation and application of a specific approach that links these methods into a logical scheme.

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